

REMARKS

Claims 21-40 are pending in the application. Claims 21-36 and 40 are allowed, while claims 37-39 are rejected under 35 U.S.C. § 102(e) as allegedly being anticipated by Lee et al. (U.S. Patent No. 6,844,604).

Applicants respectfully traverse the rejection of claims 37-39, at least for the following reasons.

In the semiconductor device of claim 37, the gate insulating film has a layered structure having, from the silicon substrate side, a first silicon oxide film, a metal oxide film or a metal silicate film, and a second silicon oxide film. Only the second silicon oxide film has a structure in which nitrogen is introduced into silicon oxide.

Lee discloses a layered structure having a silicon substrate 10, a silicate interface layer 12, a high-K dielectric layer 14, and a polysilicon layer 24 in this order, as described in Fig. 2. In Lee, a gate insulating film 15 has a silicate interface layer 12, and a high-K dielectric layer 14. The silicate interface layer 12 is made of a metal silicate $M_{1-x}Si_xO_2$, where the metal "M" can be Hf, Zr, Ta, Ti or Al. See column 4, lines 3-5, column 4, lines 11-14, and column 8, lines 51-53 of Lee. The high-K dielectric layer 14 is a multilayered structure having HfO_2 , ZrO_2 , Ta_2O_3 , Al_2O_3 , TiO_2 , Y_2O_3 , BST, PZT or combinations thereof. See column 5, lines 21-26 and column 5, lines 63-66 of Lee. The topmost layer of the high-K dielectric layer 14 is made of Al_2O_3 . See column 6, lines 18-20 of Lee. Furthermore, nitrogen is not introduced into the gate insulating film of Lee. The layered structure of Lee does not disclose the first and second silicon oxide films of the semiconductor device of claim 37.

Therefore, Lee does not teach each and every element of claim 37, and claim 37 is patentable over Lee. Claims 38-39 are also patentable, at least by virtue of their dependence from claim 37.

Accordingly, Applicants respectfully request reconsideration and withdrawal of the § 103 rejection of claims 37-39, and request allowance of claims 21-40.

Conclusion

In view of the above, reconsideration and allowance of this application are now believed to be in order, and such actions are hereby solicited. If any points remain in issue which the Examiner feels may be best resolved through a personal or telephone interview, the Examiner is kindly requested to contact the undersigned at the telephone number listed below.

The USPTO is directed and authorized to charge all required fees, except for the Issue Fee and the Publication Fee, to Deposit Account No. 19-4880. Please also credit any overpayments to said Deposit Account.

Respectfully submitted,

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